REMARKS

Favorable reconsideration of this application, as presently amended, is respectfully requested.

Claims 1-16 are now pending in this application. In this Amendment, claims 1-9 and 11 have been amended. New claims 14-16 have been added. Applicant believes that these claims include no new matter.

In the outstanding Office Action, the Examiner objected to claim 1 and rejected claims 1-13 under 35 U.S.C. 112, second paragraph, as allegedly indefinite. In particular, the Examiner indicated that claims 1-4, 6-7, 8-9, and 11 were indefinite.

Furthermore, claims 1-3 were rejected under 35 U.S.C.102(e) as allegedly anticipated by Dettling et al (U.S.Patent No.6,055,776, thereinafter Dettling").

Dettling discloses an apparatus for a power liftgate assembly for a liftgate of a vehicle having a power drive unit and a plurality of driven gears.

Moreover, claims 4-13 were rejected under 35 U.S.C. 103(a) as being unpatentable over Dettling in view of Hellinga et al (U.S.Patent No. 5,982,126, hereinafter, "Hellinga"). The Examiner indicated that Dettling fails to disclose the position detecting means and control means. However, the Examiner said the Hellinga teaches that it is known in the art to provide a vehicle door with several kinds of position detecting means and a control means.

The Hellinga reference discloses the power closure panel control apparatus having actuating means, in conjunction with the gas struts, for moving the liftgate in the closing or opening direction, and the panel location sensing means for measuring the relative movement of the liftgate.

In response to these rejections, Applicants respectfully traverse these rejections based on the amended and new claims submitted herewith. In this Amendment, Applicants have amended claims 1-9 and 11 for purpose of clarifying the subject matter recited in these claims which are directed to the rear gate opening and closing apparatus. Moreover, in presenting new claims 14-

16 in this Amendment, Applicants have taken into consideration the various issues raised by the Examiner in these rejections. These claims 14 to 16 relate to the combination of the vehicle and the rear gate opening and closing apparatus. Applicants respectfully submit that the amended claims and the new claims comply with the requirements of 35 U.S.C. 112, second paragraph, and further that the claims patentably distinguish from the Dettling reference and the Hellinga reference, whether considered alone or in combination. Withdrawal of these rejections is respectfully requested.

Applicants' invention recited in claim 1 is related to an apparatus for opening and closing a rear gate of a vehicle. The apparatus comprises a power source unit, a slider, a hinge arm, a connecting rod, mounting base, a mounting base installer and a gas stay, where the hinge arm is rotated by power transmitted from the power source unit through the slider and the connecting rod, where the hinge arm is biased by the gas spring. Further, the power source unit is supported by the mounting base which is installed in a space formed by a rear rail, a side rail and an under roof of said vehicle by mounting base installer. Moreover, the gas stay is rotatably connected to the hinge arm and the side rail at each end portion thereof.

According to this structure, the drive unit, the connecting rod, hinge arm and the gas spring are secured to the steady roof members such as a rear rail, side rail and an under roof of the vehicle, and therefore these can be supported in a stable condition.

Furthermore, the gas stay is longitudinally disposed at approximately the same height as, and in parallel with, the connecting rod, so that the apparatus can be formed compactly within a limited vertical space. Further, since these components are efficiently accommodated in that roof space, the passenger compartment space can be utilized more effectively.

Moreover, because the gas stay is disposed other than between the side edge and the rear gate, the pillar and the rear gate can be freely styled and designed. Applicants respectfully submit that these features are disclosed in the specification on pages 14 to 15.

In contrast to Applicants' invention, the Dettling reference, as discussed above, discloses the apparatus for power liftgate assembly. However, the power liftgate assembly is disposed

within or adjacent the D-pillar of the vehicle, that is, the assembly is disposed in the side edge of the opening of the vehicle, other than the roof panel. There is no disclosure of disposing the assembly under the roof. Accordingly, the Dettling reference fails to disclose disposing the power lift gate assembly in a space formed by the rear rail, the side rail and the under roof. The pillar and the rear gate can not be freely styled and designed in the Dettling structure.

Furthermore, the Dettling reference disposes the cylinder (32) which is attached to the lift gate (34) at one end thereof and the vehicle body at the other end thereof as shown in Figure 2. Accordingly the Dettling reference fails to disclose the cylinder rotatably connected to the hinge arm and the side rail. Moreover, the cylinder is not disposed in the longitudinal direction of the vehicle.

Accordingly, Applicants respectfully submit that Applicants' invention distinguishes from the Dettling reference at the point of the structure, such as the location for the apparatus and/or the gas stay. For these reasons, Applicants respectfully submit that claim 1 is now allowable over the Dettling reference.

Claim 2 defines that the mounting base is partly installable on a brace extending in the transverse direction of the vehicle. As discussed above, the Dettling reference discloses that the apparatus is disposed within or adjacent the D-pillar of the vehicle, there is no disclosure of installing the mount base on the brace. For this reason, Applicants respectfully submit that claim 2 is now allowable over the Dettling reference.

Claim 3 defines the clutch for disconnecting the power source unit with the slider so as to enable an operator to open or close the rear gate by hand. Furthermore, claim 3 is a dependent claim which depends from claim 1. Accordingly, for the same reason as given with respect to claim 1, Applicants respectfully submit that claim 3 is now allowable over the Dettling reference.

Regarding claims 4-13, the Examiner had rejected claims 4-13 under the combination of Dettling and Hellinga. However, claims 4-13 depend from claim 1, and as discussed above, claim 1 clearly distinguishes from Dettling. Even if the Dettling structure were to be modified by incorporating reasons of the type shown by Hellinga, the embodiment would still not reach

Applicants' invention. For this reason, Applicants respectfully submit that the combination of Dettling and Hellinga fails to render the claimed invention prima facie obvious, and therefore this rejection should be withdrawn. Hence, Applicants submit that claims 4-13 are patentable over these references.

Regarding claims 14-17, these have been added as new claims which define the vehicle including the apparatus for automatically opening and closing a rear gate of the vehicle.

In particular, claim 14 defines a vehicle having an apparatus for automatically opening and closing rear gate, in clearly a drive unit, a hinge arm, a connecting rod, and a gas stay, where the drive unit is installed in a space formed by a rear rail, a side rail, and an under roof of the vehicle, and where the drive unit rotates the hinge arm by transmitting power through the connecting rod. Further, the gas stay is provided between the hinge arm and the side rail extending in the longitudinal direction of the vehicle at approximately the same height as, and in parallel with, the connecting rod. The gas stay biases the hinge arm opening direction so as to assist the operation of the drive unit. This structure is supported in the specification at the page 8, lines 2-24, and at the page 14, line 2 to page 15, line 2.

As discussed above in connection with claim 1, the Dettling reference disposes the power liftgate assembly within or adjacent the D-pillar of the vehicle, and there is no disclosure of disposing the assembly in the space formed by the rear rail, the side rail and the under roof. The pillar and the rear gate can not be freely styled and designed in the structure shown in the reference.

Furthermore, the Dettling reference disposes the cylinder (32) between a lift gate (34) and drive arm (40) which is driven by a motor as shown in Figure 2, it does not connect the hinge arm and the side rail. Moreover, it is not disposed in the longitudinal direction of the vehicle at approximately the same height as and in parallel with the connecting rod. Accordingly, the Dettling reference fails to disclose the vehicle having the apparatus for opening and closing the rear gate as defined in claim 14. Applicants respectfully submit that claim 14 is now in condition for allowance.

Claims 15-16 are dependent claims which depend from claim 14. Claim 15 defines components of the drive unit in detail. The drive unit comprises a power unit for producing the power; a mounting base for attaching the power unit module to the rear rail, the side rail and the under roof; and a slider traveling in the longitudinal direction along the mounting base based on the power for transmitting the power to the connecting rod. This structure is supported in the specification at the page 8, line 19 to page 10, line 1.

Furthermore, claim 16 defines that the drive unit includes an attachment for installing the drive unit on a reinforcement member provided under the roof panel. This structure is supported in the specification at the page 10, line 25 to page 11 line 8. It is to be noted that the mounting base for attaching the power unit module to the rear rail, the side rail, and the under roof, and the slider are not disclosed in the Dettling reference, and furthermore, the arrangement for attachment to the under roof panel is not disclosed in the Dettling reference. The Hellinga reference provided no motivation for making any structure changes or modification to the Dettling reference structure which would result in arriving at Applicants' invention. For this reason, Applicants respectfully submit that claims 15 and 16 are now in condition for allowance.

In view of the above, Applicant submits that the application is now in condition for allowance. Accordingly, an early and favorable action is respectfully requested.

Respectfully submitted,
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MARKED UP VERSION OF THE CLAIMS

1. (first amended) A rear gate opening and closing apparatus for automatically opening and closing a rear gate of a vehicle, [said rear gate pivotally connected at the upper end thereof with a vehicle body so as to swing upward and down ward], comprising:

a power source [means] unit for producing a power to actuate said rear gate;

a slider for transforming said power into a reciprocating motion and traveling in the longitudinal direction of said vehicle;

a hinge arm provided for attachment at the upper end of said rear gate for pivotally connected with said vehicle body;

a connecting rod for interlocking between said slider and said hinge arm and for transmitting said reciprocating motion to said hinge arm;

a mounting base for supporting said power source [means] unit and said slider;

a mounting base [installing means] installer for detachably installing said mounting base in a space formed by a rear rail, a side rail and an under roof of said vehicle; and

a gas stay extending in the longitudinal direction of said vehicle, [provided between] rotataboly connected to said side rail at one end thereof and said hinge arm at the other end thereof, and disposed at approximately the same height as and in parallel with said connecting rod for biasing said rear gate in an opening direction.

2. (first amended) The apparatus according to claim 1, wherein

said mounting base is partly [installed] installable on a brace extending in the transverse direction of said vehicle.

3. (first amended) The apparatus according to claim 1, further comprising:

a clutch [means] for disconnecting said power source [means] with said slider so as to enable an operator to open or close said rear gate by hand.

4. (first amended) The apparatus according to claim 1, further comprising

a position [detecting means] detector for detecting a position of said rear gate and for outputting a detection signal thereof;

[an operating means] manipulator for operating an opening and closing motion of said rear gate; and

a [control means] controller for controlling said power source for actuating said rear gate so as to automatically [opening] open and [closing] close said rear gate based on an operating signal from said [detecting means] position detector.

5. (first amended) The apparatus according to claim 4, wherein

said [control means controls] controller controls said power source for actuating said rear gate so as to control an opening and closing speed of said rear gate based on an operating signal from said [position detecting means] position detector.

6. (first amended) The apparatus according to claim 4, wherein

said [control means] controller controls said power source for actuating said rear gate so as to vary an opening speed [and closing speed at a speed determined beforehand so as to assist] so that the rotation in an opening direction is assisted when said rear gate is in a self closing zone and [to restrict] the rotation in an opening direction is restricted when said rear gate is in a self opening zone.

7. (first amended) The apparatus according to claim 4, wherein

said [control means] controller controls said power source for actuating said rear gate so as to vary [an opening and] a closing speed [at a speed determined beforehand so as to rotate] so that the rear gate is rotated in a closing direction against a biasing force of said gas stay when said rear gate is in a self opening zone and [to restrict] the rotation in a closing direction is

restricted when said rear gate is in a self closing zone.

8. (first amended) The apparatus according to claim 4, wherein

said [control means] controller judges based on said detection signal from said position detector a fully opened or closed condition of said rear gate [based on a said detection signal].

9. (first amended) The apparatus according to claim 4, wherein

said [control means] controller judges based on a load of said power source unit a fully opened or closed condition of said rear gate [based on a load of said power source means].

11. (first amended) The apparatus according to claim 4, wherein

said [control means] controller judges whether or not the opening and closing operation is performed automatically based on a speed of said rear gate at which said rear gate is manually operated,

when the speed of said rear gate at which said rear gate is manually operated is within a specified speed range, said controller judges that the opening and closing operation is performed automatically.

14. (new) A vehicle having an apparatus for automatically opening and closing a rear gate of said vehicle, comprising:

a drive unit installed in a space formed by a rear rail, a side rail and an under roof of said vehicle, said drive unit producing a power to actuate said rear gate;

a hinge arm rotatably attached to a vehicle body for rotatably supporting said rear gate;

a connecting rod connected to said drive unit and said hinge arm for transmitting the power of said drive unit to said hinge arm so as to rotate said hinge arm; and

a gas stay connected to said hinge arm at the end thereof and said side rail at the other end thereof for biasing said rear gate in an opening direction so as to assist the operation of said drive

unit, said gas spring being disposed at approximately the same height as and in parallel with said connecting rod with extending in a longitudinal direction of said vehicle.

15. (new) The vehicle according to claim 14, wherein:

said drive unit includes

a power unit module for producing the power,

a mounting base for supporting said power unit module and adapted to be attached to said rear rail, said side rail and said under roof, and

a slider connected to said connecting rod and said power unit, and traveling in said longitudinal direction along said mounting base based on the power of said power unit module.

16. (new) The vehicle according to claim 14, wherein:

said drive unit includes an attachment for installing said drive unit on a reinforcement member provided under said roof panel.

MARKED UP VERSION OF THE PARAGRAPHS

Please rewrite the paragraphs as follows:

The paragraph beginning at page 1, line 12:

-- As shown in Fig. [12] 11, generally a rear gate 102 disposed in the rear of a vehicle is a lid swinging up and down for opening and closing an opening 101. The rear gate 102 is at the upper end thereof secured to a hinge arm 103 rotatably supported by an upper edge of the opening 101 of a vehicle body 100. --

The paragraph beginning at page 2, line 16:

-- According to the rear gate structure shown in Fig. [12]11, the gas stay 105 laid between the rear gate 102 and the side edge 104a provides an assist force when the rear gate 102 operates to open or close and as a result the operating effort of the rear gate 102 can be reduced.--

The paragraph beginning at page 2, line 21:

-- Referring to Fig. [13]12, when the rear gate 112 is wings upward, the hinge arm 113 rotates integrally with the rear gate 112 around the pivoting point P. Then, since the coil spring 119 pushes the curved section 114, a rotating force is applied to the hinge arm 113, thereby the operating effort when opening the rear gate 112 can be reduced.--

The paragraph beginning at page 8, line 19:

-- The opening and closing apparatus 30 has the drive unit 31 and a gas [spring] stay apparatus 50 for assisting the operation of the drive unit 31. As shown in Figs 2 and 4, the drive unit 31 is provided with a mounting base 32 having a base plate 32A with a slot 32a longitudinally spahed, a rear flange 32b and a side flange 32c for reinforcing the base plate 32A. --

The paragraph beginning at page 12, line 22:

-- The gas spring 51 is rotatably connected at one end thereof with a bracket 53 secured to

the side rail 16 through a ball joint 54 and is also rotatably connected with at the other end thereof, that is, an end of a position rod 51a, with the gas stay connection section 27 of the hinge arm 23 through a ball joint [56] 55. --